

Case 3510

***Cyclodina aenea* Girard, 1857 (currently *Oligosoma aeneum*; Reptilia, Squamata, SCINCIDAE): proposed conservation of the specific name and suppression of the senior subjective synonym *Tiliqua ornata* Gray, 1843 (currently *Oligosoma ornatum* Gray, 1843)**

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Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve the specific name of the name *Oligosoma aeneum* (Girard, 1857), widely used for a species of New Zealand skink, commonly known as the copper skink. We have found *Tiliqua ornata* Gray, 1843 (currently *Oligosoma ornatum*) to be a senior subjective synonym and the oldest available name for this species. The name *Oligosoma ornatum* has been incorrectly applied since 1977 to a similar but larger sympatric species, commonly known as the ornate skink, and prior to 1977 was in use for a third species, now identified as the brown skink, *Oligosoma zelandicum* (Gray, 1843). With various generic name changes the name *Oligosoma ornatum* has been in widespread usage for the larger ornate skink and *Oligosoma aeneum* for the smaller copper skink, for more than 30 years. Application of the specific name *Oligosoma ornatum* to a third species within 35 years will cause extreme confusion and inaccuracy of recording of biological data and conservation status. The Commission is requested to maintain the use of the junior synonym *Oligosoma aeneum* as a nomen protectum and suppress the name *Oligosoma ornatum* as a nomen oblitum.

Keywords. Nomenclature; taxonomy; Reptilia; Squamata; SCINCIDAE; *Oligosoma*; *Cyclodina*; *Oligosoma ornatum*; *Oligosoma aeneum*; copper skink; ornate skink; New Zealand.

1. In the process of writing a paper redefining the North Island New Zealand skink species currently known as *O. ornatum* (ornate skink) we discovered that the relative size of the ear opening is a character which very reliably separates the two species currently known as ornate skink and copper skink. These species, the smaller copper skink and the larger ornate skink, are broadly sympatric. They differ in diagnostic details of colour and colour pattern as well as in adult size, but the only diagnostic character we have been able to find, which can be used in bleached museum specimens small enough to be either species is the relative size of the ear opening. The

reliability of this character was not recognised previously and has only become apparent to us in the last year. Our re-examination of the holotype of *Tiliqua ornata* Gray, 1843 establishes that it is conspecific with the smaller species currently known as *O. aeneum* (copper skink). Although the colour has faded, the small size of the specimen combined with its sexual maturity, and the size of the ear opening confirm this identification, in agreement with Robb (1977, 1986). The animal also has six supralabials whereas all of the *O. ornatum* specimens we have examined as part of our revision have seven. It is not possible to carry out a genetic analysis of the holotype because of its state of preservation.

2. Gray (1843) established the name *Tiliqua ornata*. The holotype BMNH RR1946.8.19.39 is in the collection of the Natural History Museum, London. This type belongs to the smaller of two similar widespread North Island New Zealand skink species.

3. Girard (1857) established the name *Cyclodina aenea*. The type was listed by Hardy (1977) as lost from the collection of the Smithsonian Institution National Museum. Zug (1985) reported that there is no catalogue entry for this species in the Smithsonian, so the specimen may never have been deposited, and also could not find it in the collection of the Academy of Natural Sciences in Philadelphia. The description agrees with the copper skink, the smaller of the two widespread North Island New Zealand skink species – the same species which the types of *Tiliqua ornata* Gray, 1843 belong to.

4. On the same page of the same paper as his description of *C. aenea*, Girard (1857) described *Hombronia undosa* from a specimen from the same locality. This name is a junior synonym of *Cyclodina aenea* Girard, 1857 (Hardy, 1977, p. 264) and of *Tiliqua ornata* Gray, 1843. We have borrowed the holotype specimen of *Hombronia undosa* (USNM 5627) from the Smithsonian, and found it to be completely bleached of all colour. However, despite a skin fold partially obscuring it, the diagnostic relative size of the ear opening confirms the previous (e.g. Hardy, 1977) inclusion of this name in the synonymy of *Cyclodina aenea* Girard, 1857.

5. *Lygosoma micans* Werner, 1895 was regarded as another synonym of *Cyclodina aenea* Girard, 1857 by Lucas & Frost (1897), Hardy (1977) and Chapple et al. (2008). The authors of the latter two papers provided no discussion of this synonymy, and Lucas & Frost (1897) referred only to the published description, not to any specimen. We were unable to locate the holotype specimen of *Lygosoma micans* for examination. Type collections of the Zoologisches Museum, Hamburg (which we assume to be the Sammlung der zoologisch vergleichend-anatomische Universitäts-Institutes referred to in the description) were destroyed during WWII. However, we consider that the original description of this species differs in several important respects from both species under discussion here, and that this name is not referable to either. The colour is described as showing strong longitudinal mid-dorsal, dorso-lateral and lateral stripes as seen in *Oligosoma moco* (endemic to the northern North Island) and some *O. polychroma* (found in the southern North Island, South and Stewart Islands) and *O. maccani* (South Island only) but not in copper or ornate skinks. Werner's (1895) description specifically mentions that the limbs are longer and the subdigital lamellae count higher than in *Lygosoma* (now *Oligosoma*) *aeneum*.

6. Lucas & Frost (1897) associated the name *Tiliqua ornata* (cited as *Homolepida ornatum*) with the ornate skink, using *Liolepisma aeneum* for the copper skink. *Liolepisma* is an incorrect spelling of *Leiolopisma* Duméril & Bibron 1839.

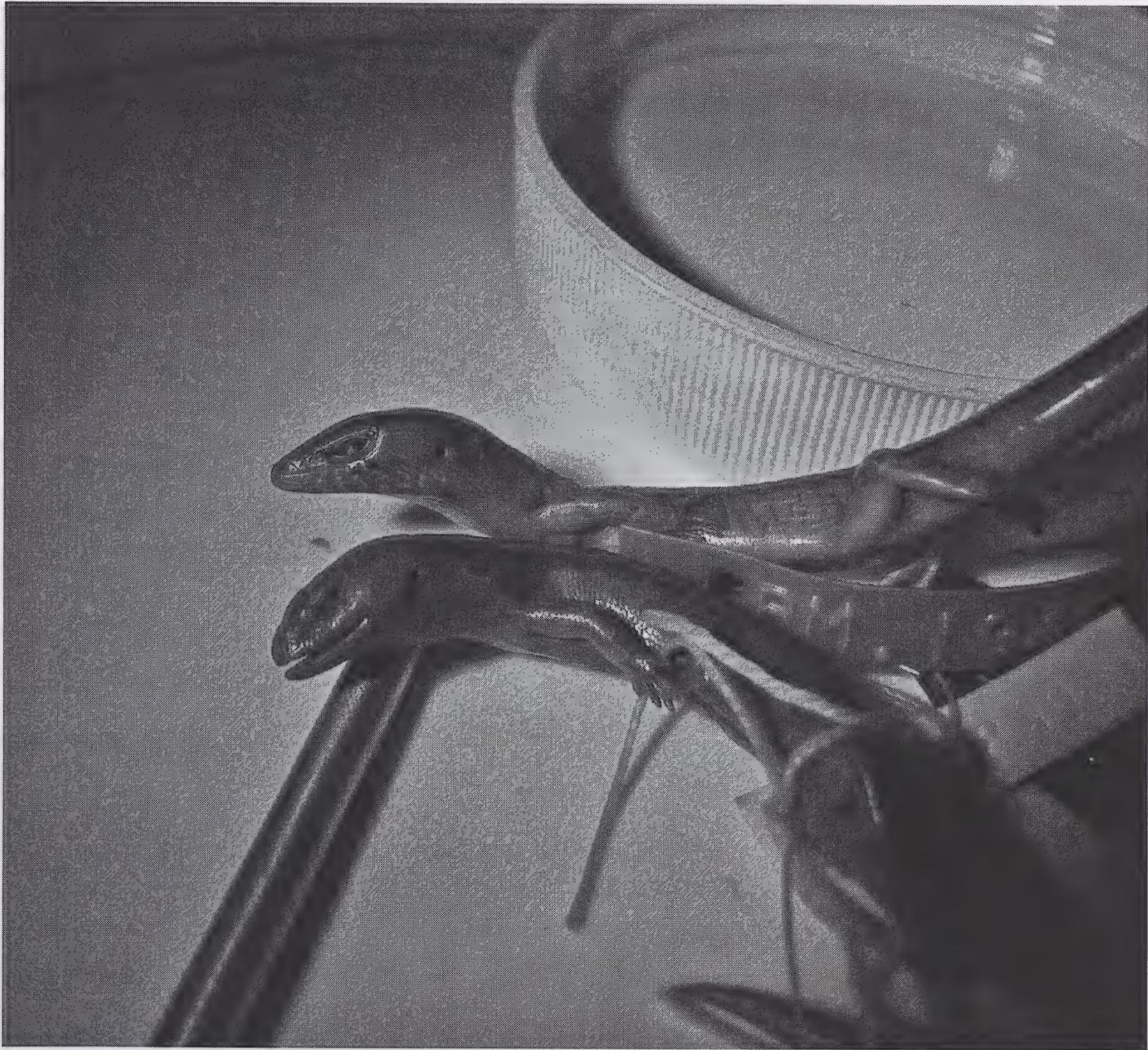


Fig. 1. Upper animal is the ornate skink, the larger species to which we believe Hardy (1977) incorrectly applied the name *O. ornatum*, lower is BMNH RR1946.8.19.39, holotype of *Tiliqua ornata* Gray (1843). We believe the two are not conspecific – note relative sizes of ear openings.

7. McCann (1955), in his monograph revising all New Zealand lizards, misapplied the specific name *ornata* (cited as *Leiolopisma ornata*) to the species now identified as *Oligosoma zelandicum* (Gray, 1843). In turn, he misapplied the name *L. zelandica* to the common skink, a species since described as *O. polychroma*. He did not examine any of the relevant types, stating that they were unavailable. He correctly identified the specific name *aenea* (cited as *Leiolopisma aenea*) with the copper skink, but used it only for populations in the southern half of the species' range. He described a new species *Sphenomorphus pseudornatus* McCann, 1955, a compound taxon which included the ornate skink plus northern populations of the copper skink. He referred to Gray's 1843 types of *Tiliqua ornata* as the types of the new species, so *Sphenomorphus pseudornatus* McCann, 1955 is an objective junior synonym of *Tiliqua ornata* Gray, 1843.

8. We consider that the names *Tiliqua ornata* Gray, 1843, *Cyclodina aenea* Girard, 1857, *Hombrovia undosa* Girard, 1857 and *Sphenomorphus pseudornatus* McCann, 1955 all belong to the smaller species, the copper skink.



Fig. 2. The copper skink *O. aeneum* sensu Girard (1857). The picture is provided by R. Ramijn.



Fig. 3. The ornate skink, the larger species, for which Hardy (1977) used the name *O. ornatum*, incorrectly in our opinion. The picture is provided by A.H. Whitaker.

9. Gill (1976) clarified the nomenclature of *Tiliqua zelandica* Gray, 1843 (p. 202) (cited as *Leiolopisma zelandica* and currently placed in *Oligosoma*), establishing that the holotype of *zelandica* (BMNH RR1946.8.16.19) belonged to the species with the common name brown skink, not the common skink to which McCann (1955) had misapplied the name. He did not mention the copper or ornate skinks in this paper.

10. Hardy (1977, p. 263) determined that specimen BMNH RR1946.8.19.39 was the holotype of *Tiliqua ornata* Gray, 1843. He clarified the distinction between the two species which had been partly confused by McCann (1955) (McCann's *Leiolopisma aenea* and *Sphenomorphus pseudornatus*), but, following Lucas & Frost (1897), he misidentified the totally bleached holotype of *T. ornata* and used the name *ornata* incorrectly for the larger species. Hardy (1977) also redescribed *Cyclodina aenea* Girard, 1857 to include populations of the smaller species from all parts of the North Island, and resurrected the genus *Cyclodina* Girard, 1857. Included in this genus were both species under discussion here plus four others (*C. oliveri*, *C. alani*, *C. macgregori* and *C. whitakeri*).

11. Robb (1977, 1986) correctly identified the types of *Tiliqua ornata* Gray, 1843 with the smaller species colloquially known as the copper skink, based primarily on the small size of the BMNH type specimen combined with its sexual maturity. She also rejected *Cyclodina* as a distinct genus, recognising all the New Zealand skinks as members of *Leiolopisma*. However her proposal was poorly explained and was not generally accepted and Hardy's (1977) nomenclature continued in general use.

12. Patterson & Daugherty (1995) transferred all New Zealand members of *Leiolopisma* to the resurrected endemic genus *Oligosoma* Girard, 1857, but continued to recognise *Cyclodina* Girard, 1857 as distinct. *Cyclodina* included the six species assigned to the genus by Hardy (1977); all other endemic New Zealand skinks were included in *Oligosoma*.

13. Chapple et al. (2008) described two new narrow-range local endemic species related to the copper skink, and re-diagnosed the widespread copper skink. They acknowledged uncertainty over the specific identity of the types of *Tiliqua ornata* Gray, 1843, but were unable to resolve the issue, and followed the status quo in using the name *Cyclodina aenea* Girard, 1857 for the copper skink.

14. Chapple et al. (2009) synonymised *Cyclodina* Girard, 1857 with *Oligosoma* Girard, 1857. This meant that all endemic New Zealand skinks are now members of *Oligosoma*.

15. Scientific interest in New Zealand reptiles has increased enormously in the last 30 years. The Society for Research on Amphibians and Reptiles in New Zealand has more than 100 members, and in addition a substantial number of conservation managers in the New Zealand Department of Conservation and regional government bodies, and informed amateur members of the public have significant interest in lizards (<http://www.doc.govt.nz/conservation/native-animals/reptiles-and-frogs/species-information/atlas-of-the-amphibians-and-reptiles-of-nz/electronic-atlas/>; <http://www.doc.govt.nz/conservation/native-animals/reptiles-and-frogs/species-information/atlas-of-the-amphibians-and-reptiles-of-nz/electronic-atlas/get-atlas-species-names/>; <http://www.reptiles.org.nz/>; <http://www.srarnz.org.nz/>; <http://www.landcareresearch.co.nz/research/wildlifeecol/herpetology/>; Hitchmough et al. (2010); Gill & Whitaker (2001); Jewell (2008); Towns (1985); Barnett (1985); Department of Conservation (2002); Dawson & Lucas (2000); Fitter (2010); Gill (1986); Hudson (1994); Hunt & Lucas (2004); Newman (1982); Pickard & Towns (1988); Porter (1989); Ussher (2001).

The great majority of these people have known only the current nomenclature (*O. aeneum* for the smaller species and *O. ornatum* for the larger species). In addition the common names for the larger species (ornate skink) and smaller species (copper skink) are derived directly from the currently-used specific names. Providing new names for these species would cause considerable confusion, but transferring the same name from one to the other will make the confusion extreme. Their ranges are almost completely sympatric and they are morphologically similar apart from adult size, relative size of ear opening and some details of colour pattern. The reliability of many distribution records and other data related to these two species could be compromised for many years to come because of this confusion, and there is a serious risk of information from the previous different use of the name being associated with the wrong species. The larger ornate skink in particular, while still widespread, is believed to be in decline and is of some conservation concern (Hitchmough et al., 2010). This species has no available specific name and will require a new one. Its conservation will be compromised if there is widespread confusion over the identity of records of specimens identified as *O. ornatum*. Potential confusion already exists because of the incorrect use of the name *ornata* for the brown skink between 1955 and 1977; transferring the same specific name to the copper skink now will compound this problem.

16. We consider there is a very strong case to suppress the senior synonym *Oligosoma ornatum* in favour of *Oligosoma aeneum* to avoid unnecessary confusion of the two species.

17. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the name *ornata* Gray, 1843, as published in the binomen *Tiliqua ornata*, for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy;
- (2) to place the name *aenea* Girard, 1857, as published in the binomen *Cyclodina aenea*, on the Official List of Specific Names in Zoology;
- (3) to place the name *ornata* Gray, 1843, as published in the binomen *Tiliqua ornata*, on the Index of Rejected and Invalid Specific Names in Zoology as suppressed in 1 (above).

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Acknowledgement of receipt of this application was published in BZN 67: 2.

Comments on this case are invited for publication (subject to editing) in the Bulletin; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).